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ABSTRACT

Acadia University is the first "laptop" university in Canada. The Acadia Advantage program has each incoming student and each faculty member equipped with a laptop computer. In addition, classrooms, library, residence rooms, and common areas are wired so that the network is accessible both in and out of classrooms. This initiative has been accompanied by a paradigm shift from teacher-centered to learner-centered instruction. This paper describes one example of the new class of learning support tools that are needed to take advantage of the reality of student-centered, mobile technology. The technology is used to integrate the student experience inside and outside the classroom, and perhaps more importantly, within the campus community and the world. The Digital Agora, which is now being used in three political science courses at Acadia (International Politics, Peace Studies, and Introductory Political Science) is an ambitious interdisciplinary project that provides pedagogical support for the understanding and analysis of complex issues in the social sciences, using the World Wide Web for connectivity both on and off campus. Contains 10 references. (Author/AEF)

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THE DIGITAL AGORA: INTERACTION and LEARNING in POLITICAL SCIENCE

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Abstract: Acadia University is the first "laptop" university in Canada. The Acadia Advantage program has each incoming student and each faculty member equipped with a laptop computer. In addition, classrooms, library, residence rooms, and common areas are wired so that the network is accessible both in and out of classrooms. This initiative has been accompanied by an educational paradigm shift from instructor-centered to learner-centered. In this paper we will describe one example of the new class of learning support tools that are needed to take advantage of the reality of student-centered, mobile technology. The technology is used to integrate the student experience inside and outside the classroom, and perhaps more importantly, within the campus community and within the world community. The Digital Agora is an ambitious interdisciplinary project that provides pedagogical supports for the understanding and analysis of complex issues in the social sciences, using the web for connectivity both on campus and off campus.

Introduction

Acadia University is the first "laptop" university in Canada. The Acadia Advantage program has each incoming student and each faculty member equipped with a laptop computer. In addition, classrooms, library, residence rooms, and common areas are wired so that the network is accessible both in and out of classrooms. This initiative has been accompanied by an educational paradigm shift from instructor-centered to learner-centered. In this paper we will describe one example of the new class of learning support tools that are needed to take advantage of the reality of student-centered, mobile technology [Conley et al, 1997]. The technology is used to integrate the student experience inside and outside the classroom, and perhaps more importantly, within the campus community and within the world community. The Digital Agora is an ambitious interdisciplinary project that provides pedagogical supports for the understanding and analysis of complex issues in the social sciences, using the web for connectivity both on campus and off campus.

This project recognizes the need for educational support that goes beyond accessing information [Shank and Krass, 1996] and the importance of collaboration in solving complex problems. The Digital Agora is now being used in three political science courses at Acadia, International Politics, Peace Studies, and Introductory Political Science.

The Digital Agora [Digital Agora, 1998] provides an environment in which participants from a variety of backgrounds can appreciate different points of view on complex issues, formulate coherent analyses, and generate well-articulated and well reasoned positions on issues. Participants, therefore, need to do more than just access and read position papers on the web. They need to be producers as well as consumers of information, i.e., active participants as well as audience. Figure 1 shows the home page of the current implementation of the Digital Agora with many of the components available to the participants.

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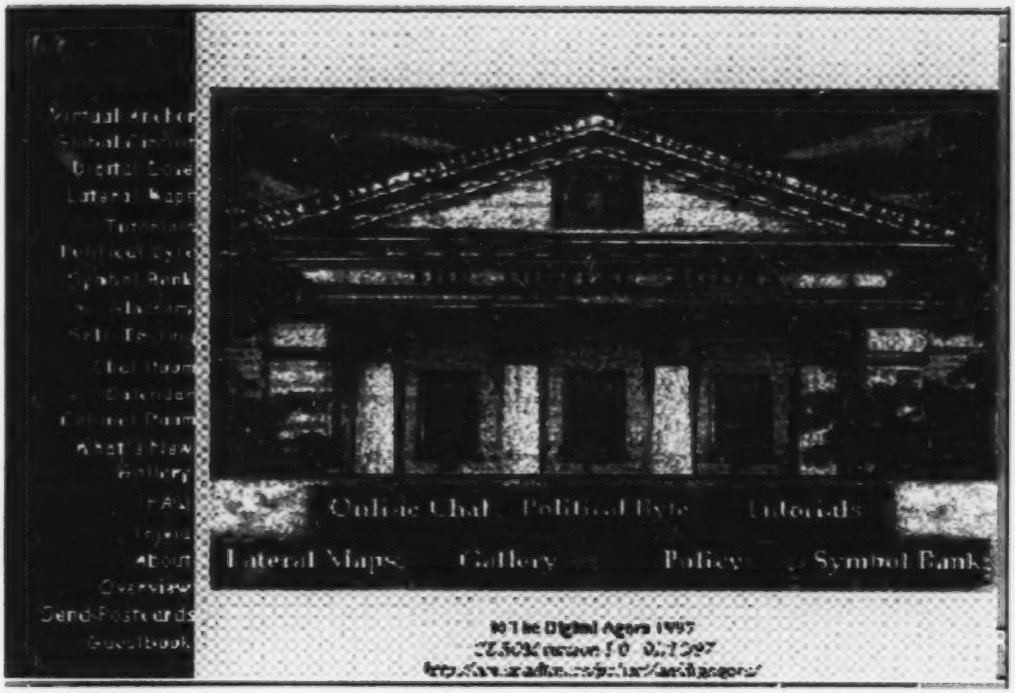

Figure 1: Home Page with Components

The Digital Agora provides support for the following functions:

- access to primary data, such as census data or government policy
- access to secondary data, such as reviews or instructor notes
- simulations, such as economic forecasts or population growth
- generation and editing of lateral maps
- quizzes and evaluations
- presentations
- discussion groups, both open and moderated
- consensus negotiation
- collaborative writing
- shared and private hypertext links
- typed hypertext links on the web
- student authorship, i.e., composition of new nodes and annotations.

In this paper, we describe how we used the web in implementing the Digital Agora and then we examine the limitations imposed on our design by the web.

Why the Web

There are some obvious and compelling reasons for implementing collaborative applications, such as the Digital Agora, on the web, including the following:

- **Scale up.** The web provides us with a huge playing field in which 10 or 10,000 users can participate.
- **Protocols**. URL, HTTP, and HTML protocols are widely accepted.
- **Metaphor**. The use of a document metaphor normalizes the presentation.
- **Access.** Universally available browsers provide a uniform interface.
- **Storage**. We can use a CDROM seamlessly for large scale local data storage.

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- **Connectivity**. Chat groups, newsgroups, and some collaborative support is available.
- **Immediacy**. Authors can add data or make changes and all participants can access this simultaneously and immediately.

What is the Digital Agora

The Digital Agora is an application with many components, most shown in the index frame in Figure 1, that are supported nearly entirely by the web.

- **Course material**. Each course using the Digital Agora has its own course related material: outlines, notes, assignments, etc.
- **Lateral maps**. Lateral maps are visual representations of arguments [Toulmin, 1958] and analysis [DeBono,1982; Novak, 1984; Sowa, 1984] and may be prepared by faculty or by students. Figure 2 shows a sample lateral map, in which the student is expressing her view that within a particular society, there may be clashes between different groups and individuals about which rights to embed in a Charter of Rights. There are currently over 1200 lateral maps available for the students on a wide range of topics, from federalism to multiculturalism.

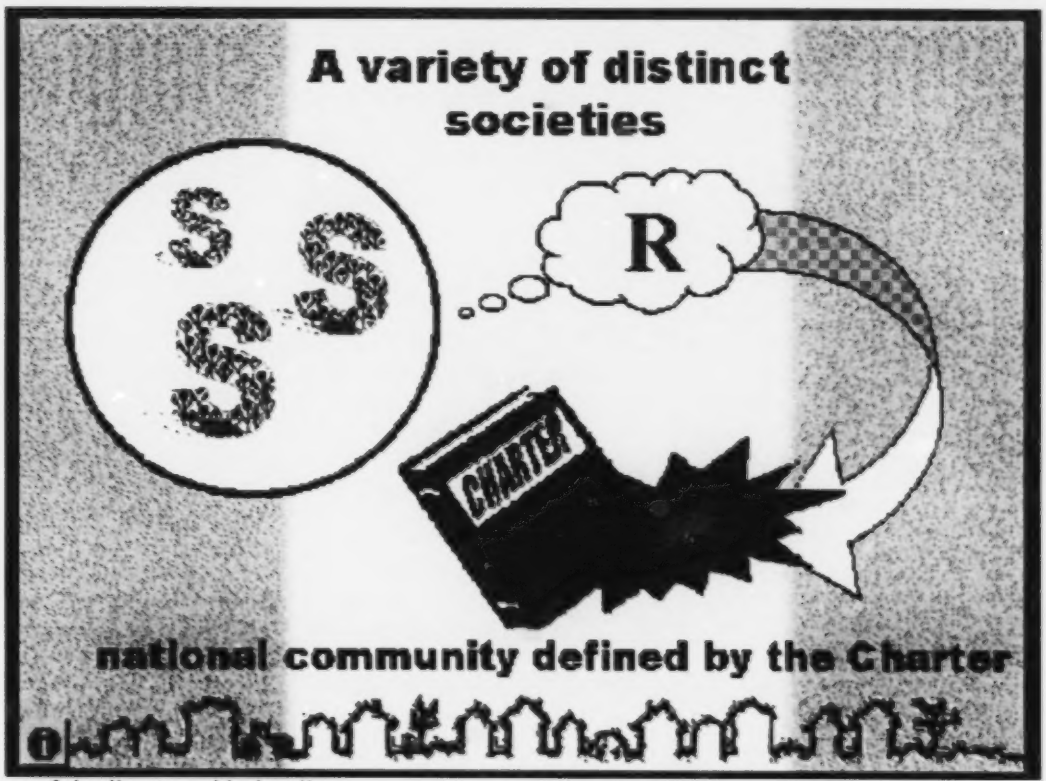

Figure 2: Sample Lateral Map

- **Tutorials**. Video enhanced tutorials are available on essay writing, presentation, etc.
- **Political byte**. Students form collaborative and virtual editorial boards to generate a weekly on-line student "newspaper" dealing with issues relevant to the current topics of discussion featuring current events, historically relevant events, photos, and "letters" to the editor.

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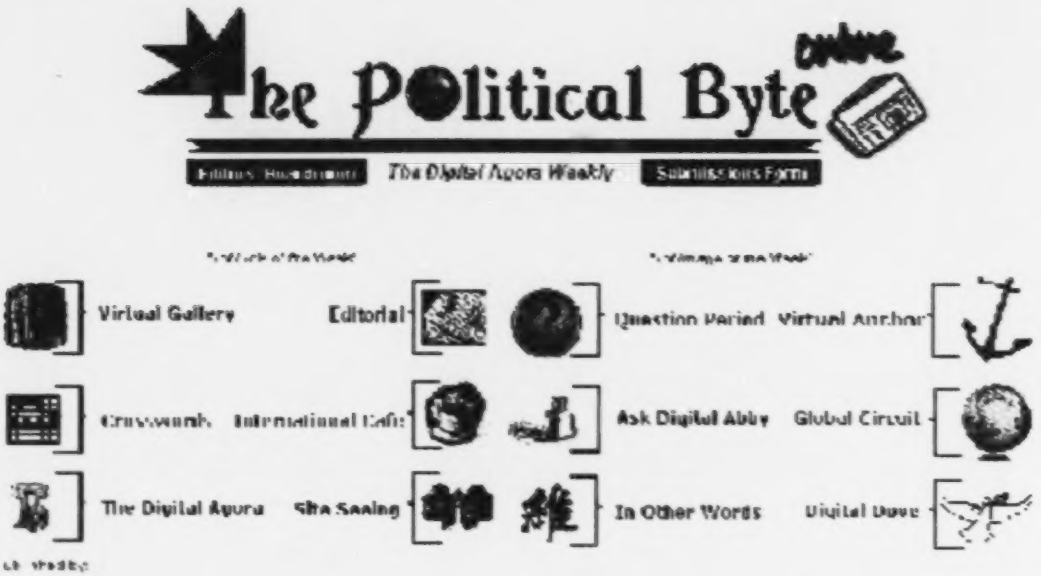

Figure 3: Sample Political Byte Newspaper FrontPage

- **Symbol bank**. A shared symbol bank is available with annotations so that students making lateral maps can use symbols that have a shared semantics. Figure 4 shows the symbol bank entries for two of the symbols, society and conflict, used in the lateral map in Figure 2.
- **Glossary**. A glossary of commonly used terms for political science discussion is maintained for the use of all participants.
- **Chat room**. Each course has one or more chat for synchronous communication [ACME, 1998].
- **Calendar**. A Java calendar is included that all participants, private, group, or public, can use. Participants can also edit those calendars for which they have permission.
- **Cabinet room**. This is a class-based collaborative space for discussions.
- **What's new**. Course and general announcements are posted here.
- **Gallery**. The Gallery is a collection that demonstrates, by example, how political ideas are portrayed in art, music, and literature. It helps students tie their ideas into other disciplines.
- **FAQ**. FAQ services are maintained by the students.
- **Trivia**. A revolving set of trivia questions and mystery photos are posted here to challenge students and faculty.
- **Guest book**. A standard cgi-script guest book allows visitors to register and provide feedback.

Large source materials, which include many multimedia components, are stored on a Digital Agora CDROM [Digital Agora, 1998]. This includes over 1200 lateral maps, textual material, photographs, video and audio segments. The CDROM is accessed by the same web browser and links to the internet directly.

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Figure 4: Symbol Bank excerpts with images shown for "society" and "conflict"

Evaluation

On line evaluation of student opinion and usage patterns was conducted at the end of the first term. Result from this evaluation indicate that students used the Digital Agora several times a week and used the interactive components, particularly the *Political Byte*, most frequently and rated these as the most useful.

Limitations of the Web

The web provides universal access to huge distributed repositories of text and data that may be relevant to analyses in the political sciences but only rudimentary tools for facilitating the *understanding* of the complexity of issues, the *formulation* of strategies for dealing with these issues and, finally, the *communication* of ideas [Watters et al, 1998a; Watters et al, 1998b].

There are some remaining implementation issues that we found problematic on the web, including lateral map construction, node and link authorship, and semantic links.

- **Lateral Map construction** - Currently the students use Power Point to construct multi-slide, animated, and interconnected lateral maps. Web browsers can handle the slides for presentation purposes but lack a facility that the students can use for significant map construction, either individually or collaboratively.
- **Authorship** - The merging of reader and author roles is a critical feature of the Digital Agora. Users must be both readers and authors. Users must be able to make comments, initiate discussion, and make links while reading, both individually and collaboratively.
- **Relationship Links** - The Digital Agora requires links that denote a specific relationship between the current node and the destination node. These relationships[Toulmin, 1958] would include both predefined

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and user-defined types such as: *example of, annotation, in support of, contrary to, same source, same topic,* or *aggregation.*

Summary

The Digital Agora is an example of a large inter-disciplinary, inter-institutional project for the support of active learning in the social sciences that has been implemented primarily as a web-based system. The web is a natural medium for this project as the participants are from a wide variety of backgrounds and a range of participation activities are supported from simple browsing to the collaborative generation of new analyses.

Several problem areas remain to be solved in the successful deployment of the Digital Agora as a co-operative learning environment on the web: collaborative lateral map construction, typed hypertext links, node and link authorship by readers.

The Digital Agora is a good example of the next wave of educational support that moves beyond providing access to more information to providing support for the process of engaging in the solution of complex problems as a collaborative endeavor. The use of the web as the backbone for this project exploits the new mobility of students with laptops and allows for the integration of classroom exploration with off-campus collaboration and discussions.

References

[ACME, 1998] Acadia University (1998). Automated Courseware Management Environment, Acadia University, Nova Scotia Canada. [*http:// acme.acadiau.ca*]

[Conley et al, 1997] M.Conley, C.Alexander, and C.Watters (1997). Challenges and choices in designing a collaborative, computer-mediated social science classroom. Ed-Media/ Ed-Telecom 97 Conference. Calgary, June 14-19.

[DeBono, 1982] E.DeBono (1982). *Thinking Course*. BBC Books, London.

[Digital Agora, 1998] The Digital Agora Project (1998). Acadia University, Nova Scotia, Canada. [*http://ace.acadiau.ca/polisci/aa/digagora*].

[Novak, 1984] J.D.Novak (1984). *Learning How to Learn*. New York, Cambridge University Press.

[Shank and Krass, 1996]R.Shank and A.Krass (1996). A goal-based scenario for high school students. *Comm. Of the ACM,* Vol.39, No.4, April, p.28-29.

[Sowa, 1984] J.F.Sowa (1984). *Conceptual Structures : Information Processing in Mind and Machine.* Addison-Wesley. Reading, Mass.

[Toulmin, 1958] S.Toulmin (1958). *The Uses of Argument*. Cambridge, UK, Cambridge University Press.

[Watters et al, 1998a] C.Watters, M.Shepherd, C.Alexander, and M.Conley (1998). The Digital Agora: Pushing the Web Envelope. HICSS'31 Conference, Hawaii, Jan 6-9.

[Watters et al, 1998b] C.Watters, M.Conley, and C.Alexander (1998). The Digital Agora: Using technology for learning in the Social Sciences. *CACM* Vol.(41)No(1), January, p.51-57.